

## 72. What is posted on the site "To the Moon" - scans of the lunar originals? Photoshop? or just a technical defect?

18-23 minutes

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The last bastion of NASA's defenders is the site ["to the moon"](#) , which, they claim, contains the most original originals of lunar images, and even without editing. And supposedly only this site can be trusted.

The defenders of the lunar scam have serious claims to all other sites, even to the official NASA site. After I found 18 fake footage with traces of editing on the official NASA website in one cassette alone, NASA defenders squealed that the official NASA website could not be trusted - all the images were edited there.

Indeed, after scanning, the images are sent to the graphics editor and go through the post-processing process, and no one hides this - excess edges are cut off, the brightness and contrast of the images are leveled, etc.

In the previous article [69. "Apollo 11." There are 18 fake shots in just one cassette. How will NASA's defenders squirm?](#) I gave a link to Arizona State University, which performed the scan. And there it is written in black and white that **all** scanned images [go through 6 stages of post-processing](#) .

In the referenced article (numbered 69), I have extensively commented on two of these six post-processing routines.

But as a result of these operations, **masks** cannot appear around the lunar module, which are clearly visible when the image is illuminated.

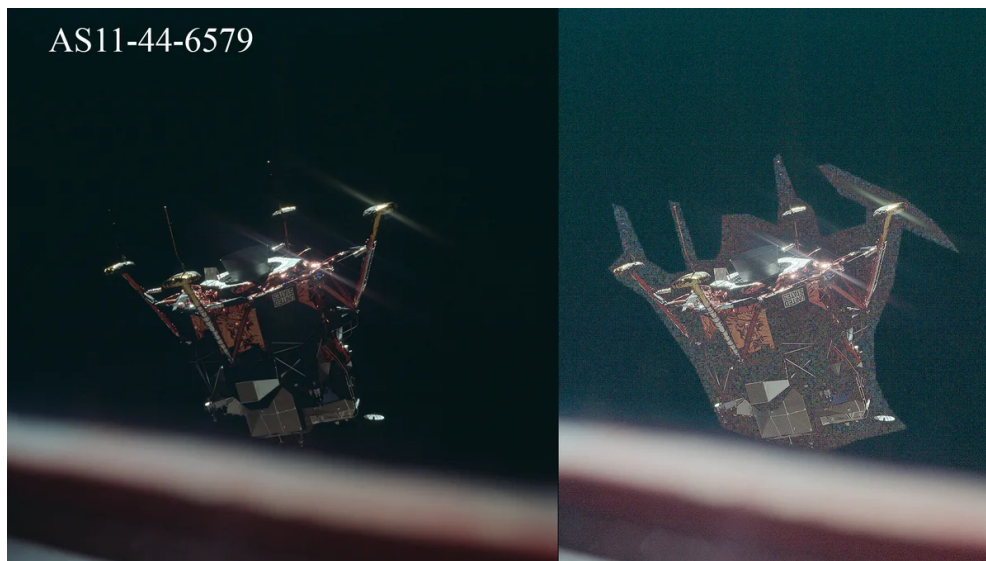


Image of AS11-44-6579 from NASA's official website (left) and how it looks when brightened and sharpened (right).

Image of AS11-44-6579 from NASA's official website (left) and how it looks when brightened and sharpened (right).

The mask around the lunar module indicates that the image of the undocking of the lunar module was assembled from two different photographs, and in these photographs there are even different graininess, inside the mask and outside - completely different noises in the shadows. Before us is a fake picture, a fake.

These photos have been on the NASA website for several years. And there are masks. In that section, they began to upload pictures since 1995 (judging by the copyright inscription at the top of the page). I find it difficult to say when exactly these photos were posted (they say that in 1998). Here's a

link: <https://www.hq.nasa.gov/alsj/a11/images11.html#Mag44>

And in another section, in the photos edited in 2019, such masks are no longer there. This means that the images in 2019 underwent deeper editing, and all the signs by which it was possible to determine the montage of the images were retouched. The fact that the photos were edited in 2019 was determined by the readers of our channel, they also named the version of Photoshop: SC-4.

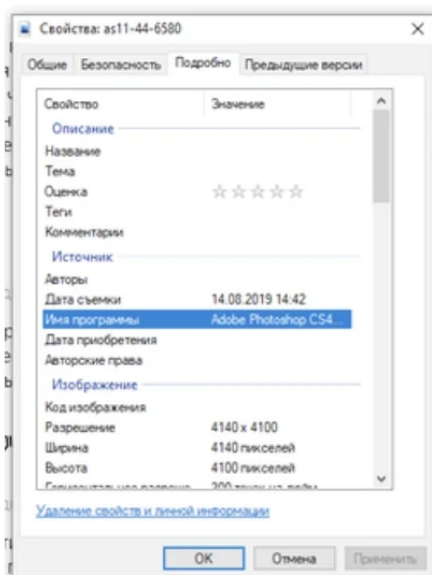


**Сергей Иванов**

Серьёзно, блеать? Adobe Photoshop CS4?

EXIF-данные файла "в высоком разрешении", без масок, от NASA:

<https://history.nasa.gov/afj/ap11fj/photos/44-v/as11-44-6580.jpg>

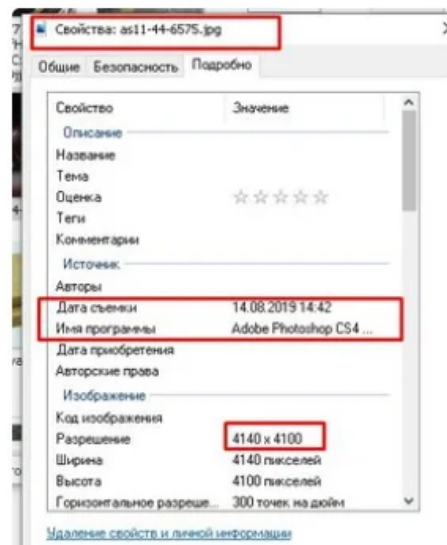


Or here's another message from another reader:

 **Роман Александрович**

Алексей, а вот и ответ

Источник <https://history.nasa.gov/afj/ap11fj/photos/44-v/as11-44-6575.jpg>



Ответить  1 

 **Роман Александрович**

Алексей, вариант без маски отредактирован в фотошопе 14.08.2019 , вариант с маской таких отметок в свойствах файла не имеет . пруф привел постом выше. Выводы делайте сами.

Ответить  1 

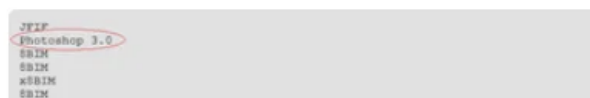
 **Вадим Калужский**

Роман Александрович, Интересно, что защитники Наса на это скажут. Хотя вероятно ничего) Я заметил, когда факты железные, они просто прерывают диалог

A hint came from our reader:

 **Евгений Брюханов**

/\*они же и назвали версию Фотошопа: SC-4. \*/ Я могу назвать версию фотошопа скандальной фотографии AS11-44-6576HR, с сайта NASA. Это: "Photoshop 3.0"



"Photoshop 3.0" appeared in 1995.



## 1995: Adobe Photoshop 3.0



В третьей версии появился один из самых важных инструментов в программе – слои.

And here is the same "scandalous" photo AS11-44-6576HR, which was mentioned by Evgeny Bryukhanov, and which we discussed earlier, in other articles. When the image is highlighted, a clipping around the lunar module is visible.

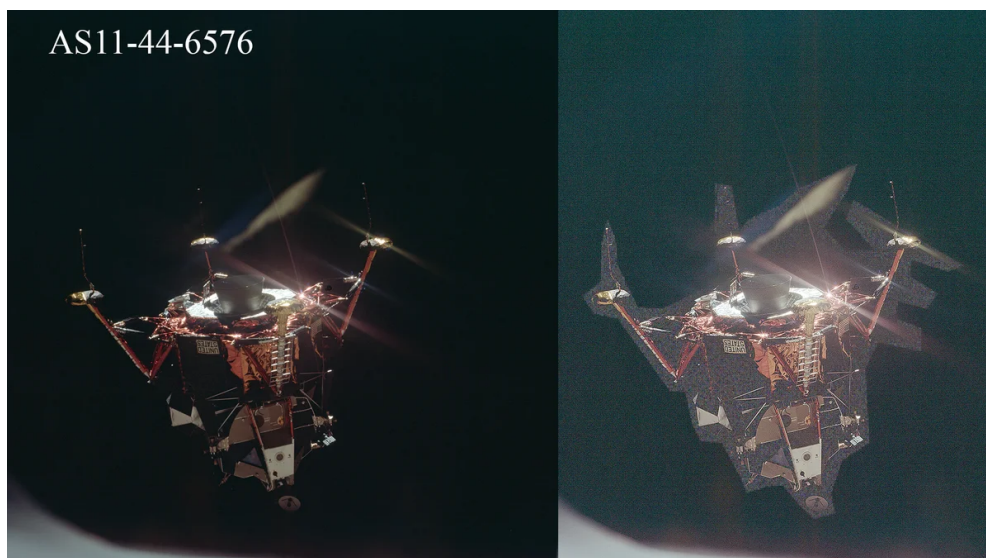


Image AS11-44-6576 from NASA's official website (left) and how it looks when brightened and sharpened (right).

Image AS11-44-6576 from NASA's official website (left) and how it looks when brightened and sharpened (right).

It turns out that in 1995-1998. the masks on the official images of NASA were, and in 2019 they have already disappeared.

On the site "[tothemoon](#)" there are no such masks around the lunar module anymore. From this site, which appeared relatively recently,

you can download versions of the same photo of different sizes. And since among the options there is not only a "compressed" jpg format, but a "raw" RAW file in 1.3 GB, then NASA defenders seized on this format and began persistently to bend the line that this particular uncompressed file is unedited, and that only he can be trusted.

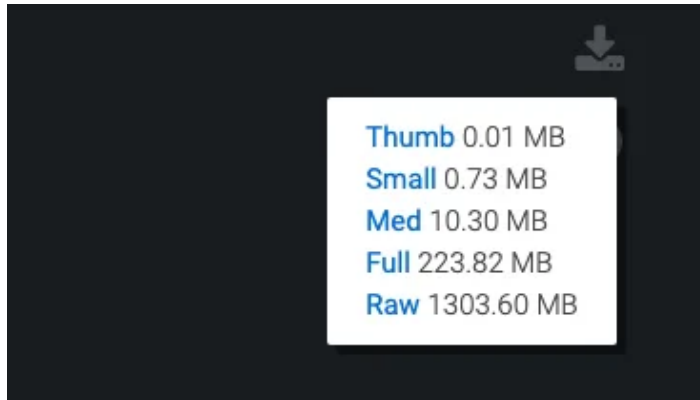


Photo upload options.

Photo upload options.

To avoid confusion in terminology, let's agree right away: the originals of the so-called "lunar" images are on a film carrier, and what is posted on the Internet on the site will be called "scans of the originals". So, NASA defenders are confident that the RAW files are scans of the originals, and that these files have not been edited.

We do not share the optimism of NASA's defenders, nor that the RAW files are scans of the originals, nor do we believe that the files were not edited. How edited!

We will show that, due to their weak technical literacy, NASA defenders (not understanding the scanning processes) are deeply mistaken and even deliberately try to deceive readers.

Using the example of one folder from the Apollo 11 mission ("[Hasselblad 500EL 70 mm](#) ") we will show that all the pictures were edited in Photoshop. There are quite a lot of pictures in this folder - 1245. Most of the pictures in this folder are black and white photos, there are 820 of them. Let's start our conversation with them.



Black and white moon shot.

Black and white moon shot.

For black-and-white photographs, we used Panatomic-X Aerial film with a photosensitivity of 80 ASA.



"Aerial" in the title means that the film is airbrushed, i.e. it is intended for aerial photography - photographing the earth's surface from an aircraft from an altitude of about 3 km. Since the shooting of the earth's surface for cartography or for other purposes is carried out on a sunny day in the absence of clouds (the illumination on the earth is about

50,000 lux), then a highly sensitive film is not required. Usually used photographic film with a sensitivity of 40-80 units. To obtain such light sensitivity, emulsions with fine grain are used, therefore the name of the film contains the phrase "fine grain". Fine grain allows for high detail resolution.

There is one parameter that distinguishes regular film from airbrushed film. Anyone who photographed the earth's surface through the window of a flying plane noticed that the air haze noticeably reduces the contrast. In addition, objects located on the ground themselves have low contrast.



Typical view of the earth's surface from a flying plane.

Typical view of the earth's surface from a flying plane.

To improve the difference between low-contrast objects, aerial film is made with a higher contrast. If ordinary photographic films have a standard contrast ratio of 0.65, then "Panatomik" is about 2 times more contrasting. Judging by the characteristic curves, its contrast ratio is about 1.5. With no air haze, this film produces high contrast images.

The "Pan" prefix in "Panatomic" means "all." The film is sensitive to the entire visible spectrum, from violet to red rays inclusive. This black and white emulsion is called "panchromatic" emulsion. I think there was an error in the description of the image attributes because of the similar

sounding words "panchrome" and "ectachrome". The "tothemoon" website calls the tape "Ektachrom".

#### Детали изображения

|                           |  |
|---------------------------|--|
| Идентификатор Изображения | AS11-39-5807   |
| Программа                 | Аполлон  |
| Номер Миссии              | 11   |
| Номер Кадра               | 5807   |
| Предмет                   | ДВИГАТЕЛИ; ФЛАГ; ТЕЛЕВИЗИОННАЯ КАМЕРА                              |
| Журнал                    | 39   |
| Камера                    | Hasselblad 500EL 70 мм   |
| Объектив                  | Zeiss Planar 80 мм f/2.8   |
| Тип Пленки                | <u>Kodak Ektachrome 3400 Panatomic-X Aerial ASA 80 черно-белый</u> |
| Кадр Desc                 | ДВИГАТЕЛИ; ФЛАГ; ТЕЛЕВИЗИОННАЯ КАМЕРА                              |
| Журнал Alt                | Q  |

But "Kodak Ektachrom" is a color **reversible** film, while "Panatomic" is a black and white **negative** film. Well, "Panatomik" cannot be "Ektachrom" in any way!

Please note that along the edge near the perforations there are identification marks - the name of the film "KODAK" and the characteristic of the base "SAFETY FILM", the latter translates as "safe film". The inscription is imprinted through a light stencil.



Light inscriptions on the edge of the film

Light inscriptions on the edge of the film



Until about 1950, the base of the film was "dangerous", combustible. It was a nitro base. And it could burst into flames from a hot projector lamp. When it caught fire, it was impossible to extinguish it - it seemed to be extinguished, the flame disappeared, but then it flares up again.



I show students how difficult it is to extinguish a burning nitro film.

I show students how difficult it is to extinguish a burning nitro film.

If you cut a strip of newspaper (35 mm wide) and take the same strip from the film and set them on fire, then the speed of fire propagation along the nitro film will be 140 times faster.

Modern triacetate films still burn too, but compared to the nitro base, they just barely smoke. Therefore, they are designated as "safe". The same applies to lavsan bases. The black-and-white film for the Apollo missions was made just from lavsan. Lavsan is well known to you - it is used to make packages for chips. Magnetic tapes for tape recorders were also made on lavsan tape. The word "polyester" abroad is not known, since this is a purely Russian word ( **LA** laboratories of **In** yskomolekulyarnyh **C** Connections **A** kademii **H** AUC USSR) abroad uses the word "polyester" or "Terylene".

About this inscription, I started a conversation so that you can see - the **inscription is well read** . It is very important. And we will return to this

fact later.

If right after scanning the black-and-white film was not processed in a graphics editor, but posted on the site **without editing** , then we would see a negative, approximately the following picture.



Negatives on 70mm film, shot by Hasselblad

Negatives on 70mm film, shot by Hasselblad

Pictures taken from [Photo album](#) .

However, on the website, a RAW file is positive. This means that with the help of software (built-in graphics editor), the image was inverted.

Those who have scanned transparent images will know that the scanner has two modes: "Slide Scan" and "Negative Scan".

If you set the " **Negative** " mode during scanning , then the result of printing a low-contrast negative on contrasting photo paper will be simulated - additional computer processing of the negative image will be activated, which will lead to the fact that the scanned image will first be inverted into positive, and then become more contrasting.

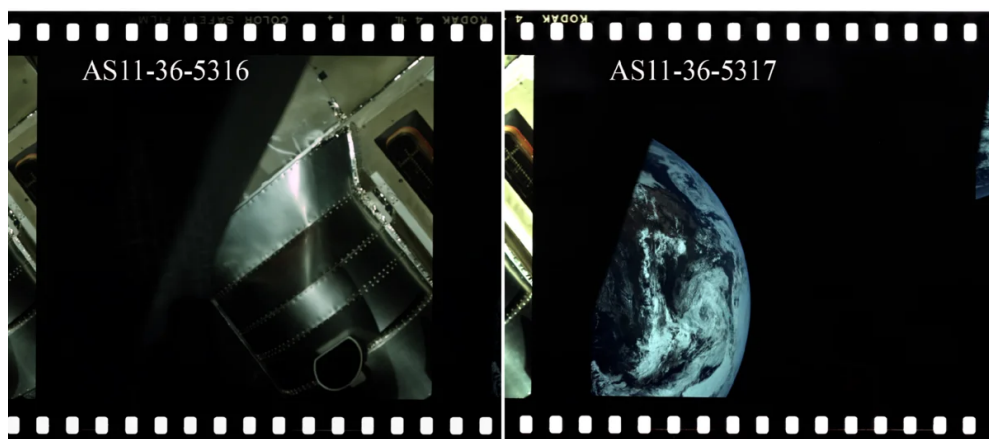
Here's what's written on the University of Arizona website in the " **Notes on Image Processing** " section .



*Fifth, a logarithmic histogram transform is applied to the image. This is necessary due to the film's logarithmic response, which makes raw scans very high contrast. Since photo paper also has a logarithmic response and alters the response of the film, conventional paper prints have a natural contrast range. Thus, a logarithmic histogram correction applied to scanned images creates a virtual print that mimics the natural contrast of conventional paper print.*

We see that the scanned negative not only goes through the inversion operation, but also its histogram undergoes a logarithmic correction. After all this, is it really possible to say that the scan of the negative is not edited?

And now - about scanning color images. According to NASA, Kodak Ektahrom film was used to obtain color images. That the images on the ToTheMoon website have been edited can be seen with the naked eye. So that you immediately notice the interference with the images, I will take two consecutive frames that are different in the plot, but stand side by side. Let's take our usual jpg and small file size, so that they can be placed here without changes. For example, images AS11-36-5316 and AS11-36-5317 from the Apollo 11 mission. The images are scanned with an overlap, on the left we see a scan of frame 5316, and on the right, a piece of the same frame, 5316, and the next frame 5317 in its entirety got into the scan.



Two adjacent scans, on the left - the AS11-36-5316 frame and a piece of the AS11-36-5317 frame, on the right - the entire AS11-36-5317 frame.

Two adjacent scans, on the left - the AS11-36-5316 frame and a piece of the AS11-36-5317 frame, on the right - the entire AS11-36-5317 frame.

We see that the metal structure in the first scan (left) looks darkened, and in the second scan (the image strip to the right of the center) - lightened. What is it actually **in the original on the film** - darkened or lightened?

The service information on the edges of the film will help us to answer this question. For example, on medium format slides on "wide" 6-cm film, frames are numbered along the edge in the form of a light mark. The actual size of the frame here is 57x57 mm, which is quite close to the size of the "Apollo" frames of 53x53 mm.



Slide 6x6 cm, Kodak Ektahrom (photographer: Mekhak Movsisyan, my classmate)

Slide 6x6 cm, Kodak Ektahrom (photographer: Mekhak Movsisyan, my classmate)

The dividing line and the frame number are clearly visible.



Slide 6x6 cm.

Slide 6x6 cm.

And here are the light marks on 35 mm Kodak Ektachrom film.

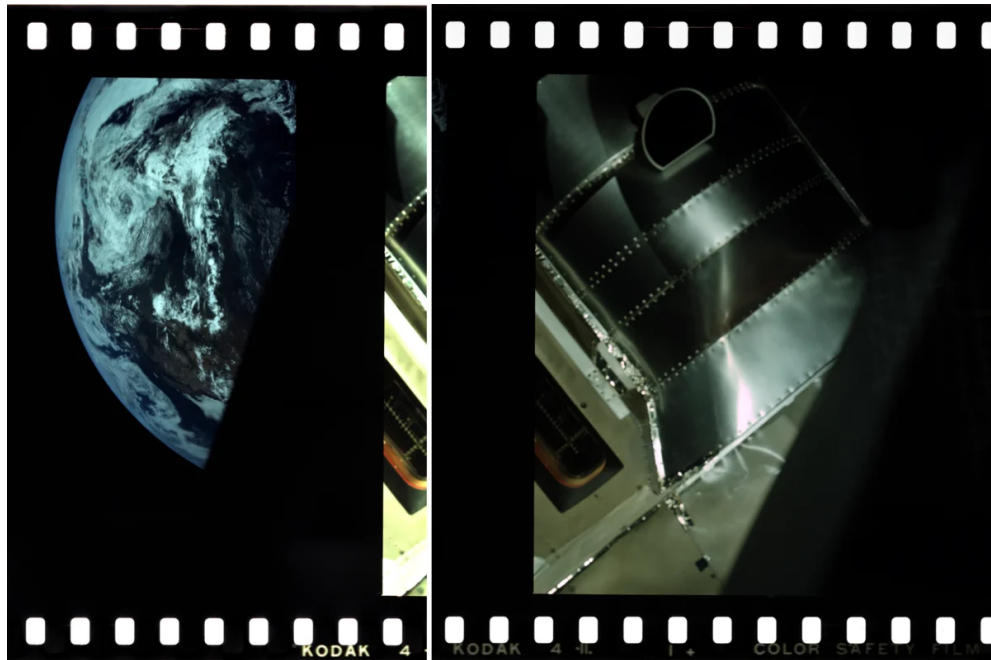


35mm Slide Film Kodak Ektachrom



## 35mm Slide Film Kodak Ektachrom

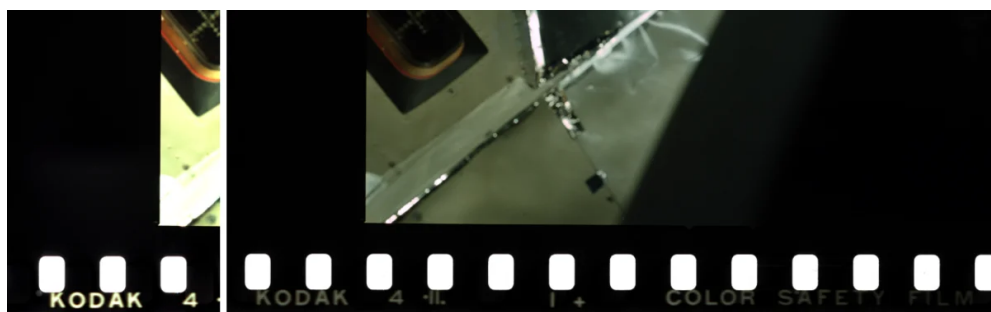
As you can see, they are light yellow and easy to read. We have already drawn your attention to the fact that the inscriptions on the black-and-white "moon" negatives along the edge of the film are well read. Now let's look at these inscriptions in a color image. Rotate the frames so that the labels are not upside down.



Enlargement of two adjacent scans.

Enlargement of two adjacent scans.

On the left scan (where the Earth is visible) the inscription is light yellow and easy to read, the letters are visible, and on the other scan (where the metal structure is in the frame) there is a very significant darkening: the light inscriptions behind the perforations "KODAK, COLOR, SAFETY" are almost unreadable. Here the difference in exposure relative to the adjacent frame is two steps, or maybe more.



The correct option is on the left, and the option on the right is an artificially darkened frame. The original is actually the one that is light.

The fact is that the brightness of the light marks is set at the factory during the production of photographic film. The inscriptions are applied immediately after punching. For decades, the same film has been poured (for example, Ektachrom 160 ASA), and the same light mark printing mode is set on this film. And so - from day to day. The whole process is highly stable and repeatable. And, as you can imagine, the brightness of the labels does not depend on how the frame was exposed during shooting.

Here are the exhibits on reversible color film. Exposure images are a series of frames decreasing in exposure, in one stop increments. The first frame (left) was taken at aperture of 2.8, the next frame at aperture 4, followed by the values of apertures 5.6, 8, 11 and 16. Exposure pictures are taken from the laboratory work on "Kinophotoprocesses" at the camera department of the All-Russian State Institute of Cinematography.



Exponograms on reversible color film.

Exponograms on reversible color film.

If we move aside the black cardboard strip, which closes the perforations from above, we will see that the exhibit was made on German ORWOCHROM UT-18 film.



One row of the exposure chart, aperture values from 2.8 to 16.

One row of the exposure chart, aperture values from 2.8 to 16.



The yellow ORWOCHROM inscription above the light frame and above the dark frame is exactly the same. And this is obvious.

But the fact is that now there will be defenders of NASA, and every second of them is a certified specialist in photographic films, and they will probably argue that the lettering on the Apollo 11 films turned out to be dark, because the exposure was incorrectly determined during the shooting frame.

are the frames dark? So it was written in plain text back in the 1969 catalog. It directly says: poor (about the frame with the Earth), LM very poor light (about the frames with LM)

I will, of course, choke on such statements. But what can you do? They are like that, these "mogs" - they always fence some kind of nonsense, and they cannot be altered. As a matter of fact, they are paid for being so inadequate.



**El Selenita**

Янас, честно говоря, я не знаю, когда эта дорожка засвечивается, так что даже здесь определенности нет. Может, при проявке, а может, в фотоаппарате, почему нет? Вариант "при проявке" мне представить труднее. Может, сам Коновалов знает.

Well, let's be clear.

Light marks are applied to the edge of the foil after the perforations have been punched into the foil. The perforated film moves along the drum (approximately like a belt drive along a generator pulley). There is a lamp inside the drum that shines up through a small slot. Longitudinal slits are cut on the surface of the drum; film stencils are glued to them - transparent inscriptions on a black background. The drum spins, and as the stencil passes the strip of light, the light exposes the film through the lettering. For example, the cyclical repetition of the inscription "Kodak" is the circumference of the drum.





Drum analogy.

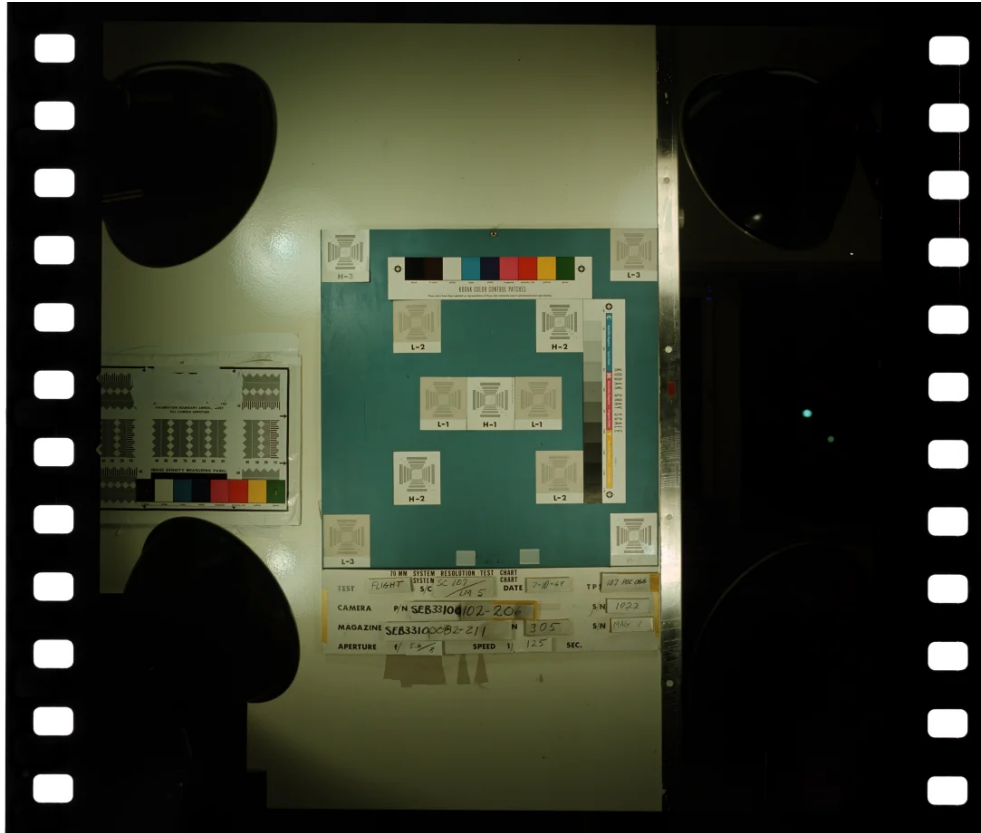
Drum analogy.

What causes the light inscription to appear dark?

Even purely hypothetically, I cannot admit the idea that Kodak has supplied defective film to NASA for several years. After all, in order for the image and inscriptions to turn out as dark as they show us on RAW files - three steps below the norm - the sensitivity of the photographic film instead of the declared 160 ASA should be 3 steps lower, i.e. total of 20 ASA units. The technical control department will never release such a film outside the factory - quality control at Kodak is at the highest level.

Likewise, I do not want to consider options for any deviations in the development of photographic film. In any laboratory, at the beginning of the working day, a control strip (or sensitogram) is first developed. And if it comes out without deviations from the norm, then only then is permission given to process ... the control frame. As you know, a frame with a checklist was imprinted into each video tape of the "lunar"

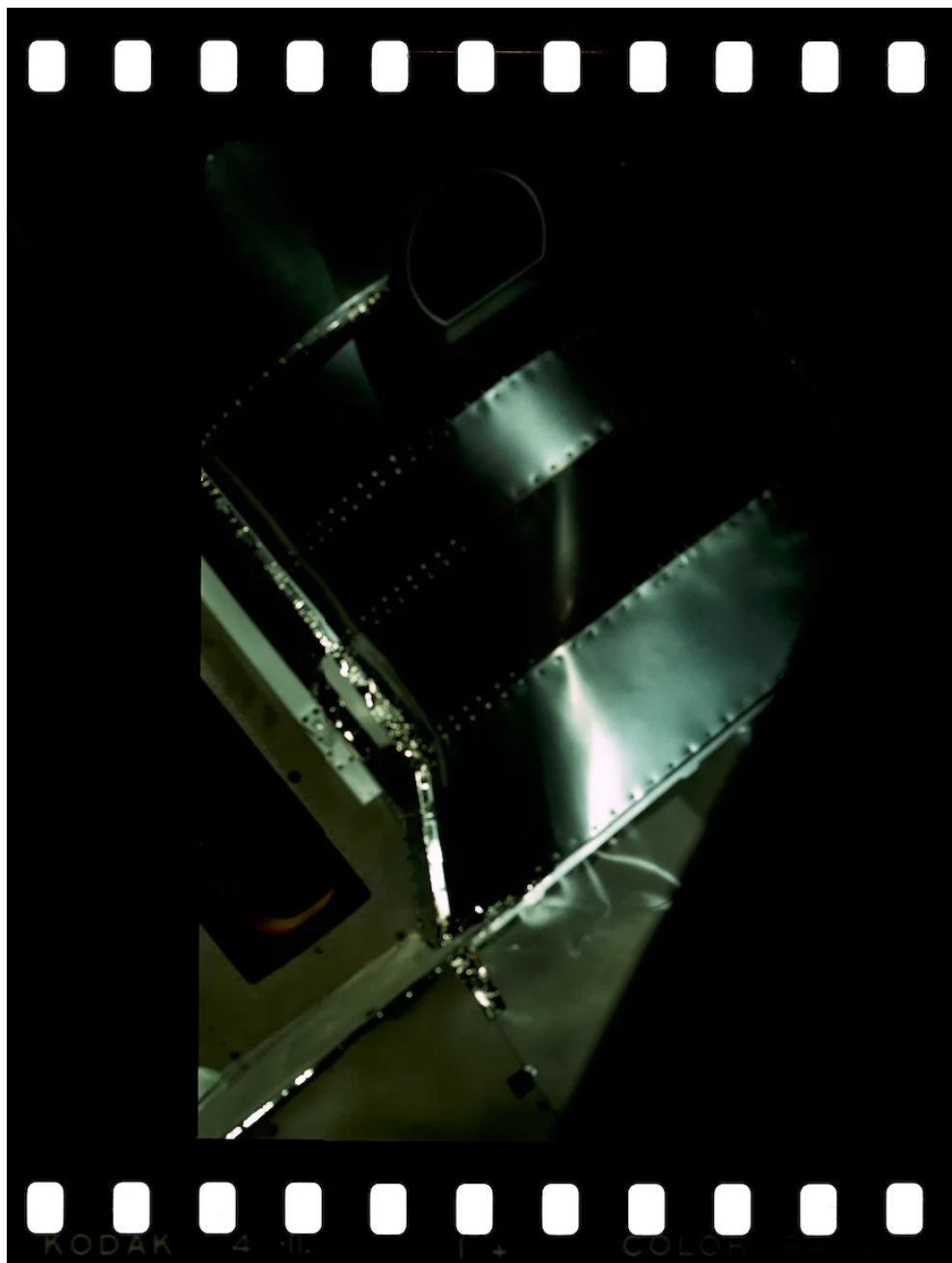
missions, and it appeared first. And only then, after developing the control frame, a decision was made to develop "unique lunar images".



A frame with a checklist (colored fields and targets for determining sharpness).

A frame with a checklist (colored fields and targets for determining sharpness).

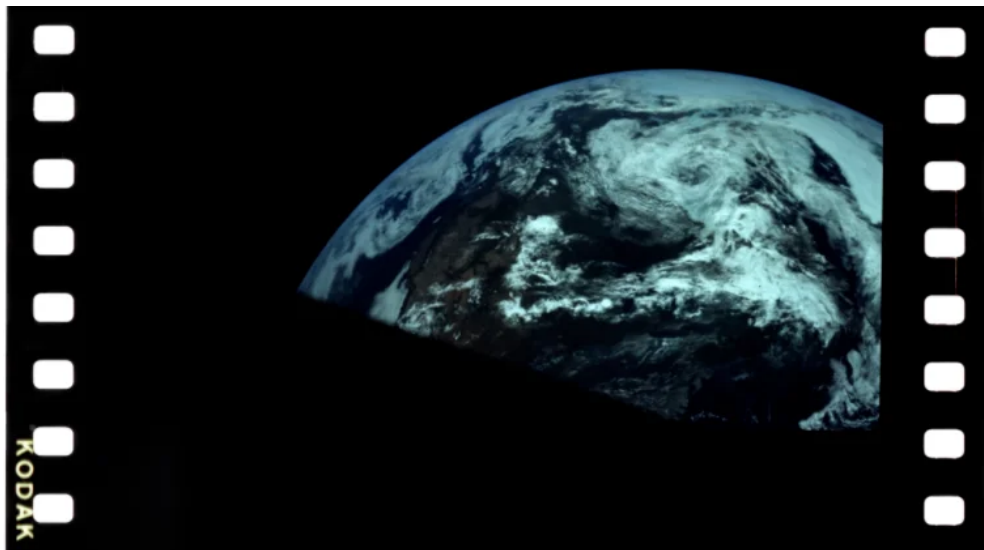
Now, from this point of view, let's look at the RAW image file AS11-36-5316. It will not work here, so I will display the image on the screen of my monitor (I will install the lightest profile on the monitor) and take a screen shot. And you can download a file (size) of 1.3 GB yourself and see it on your computer: the frame is really very dark, and the light marks are practically invisible.



Screenshot from RAW file AS11-36-5316.

Screenshot from RAW file AS11-36-5316.

In our opinion, the frame is artificially darkened by more than 3 stops. Now let's look at the adjacent frame, AS11-36-5317. This is how the Earth looks on jpg.



AS11-36-5317, jpg format

AS11-36-5317, jpg format

And like this - in a RAW file (screen shot from the screen). Note the word "KODAK" in the left corner.



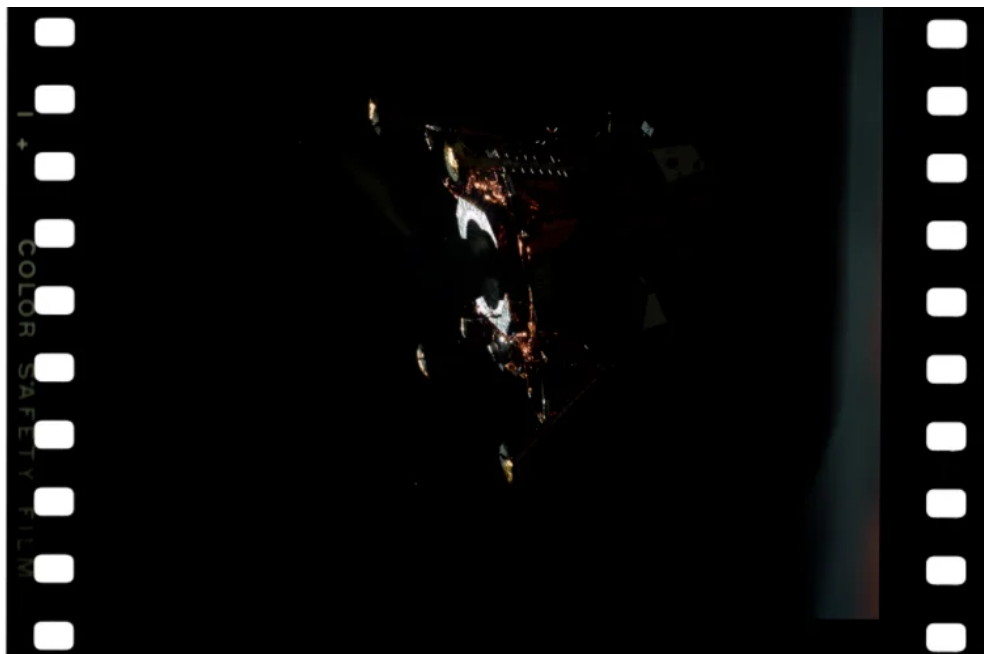
AS11-36-5317, tiff format

AS11-36-5317, tiff format

Do you see something there? There, the inscription behind the perforations is not readable, and the Earth itself is not visible. If we speak without equivocation, then before us is a **technical marriage** .

Defenders of NASA, in their comments about the lunar module undocking footage, furiously tried to prove that the lunar module **in the original on the reversing film** looks very dark and cited as an example a RAW file from the Tuzemun website (tiff format). But we now know that they showed a common technical flaw. This is not a

dark slide. These incompetent workers made overly dark files. And in which editor they were darkened - in the scanner built into the software (where there is an adjustment of the brightness of the final image) or then separately in Photoshop - this is no longer important.



Lunar module. Screenshot from RAW image file AS11-44-6577

Lunar module. Screenshot from RAW image file AS11-44-6577

During the 10 years that I was the head of the Processing Shop at VGIK (1998-2008), I reviewed so many kilometers of marriage that you never dreamed of it. It is not difficult for me to objectively and unbiasedly assess that we are dealing with a marriage of the image - after all, besides this, I have been working as a cameraman for another 30 years.

On the site "To the Moon" I looked at a large number of RAW files, primarily color images. The picture is sad, all this is either marriage or on the verge of marriage. I even wonder how such images could pass the technical control department. Any quality control department in a film studio would reject such material and force them to redo the work.

**Let's make a preliminary summary. All "lunar" images on the Tuzemun website ("March to the Moon") were edited before being published on the site, this applies to both black and white and color images. Both jpg and tiffs were edited. The RAW files, which occupy the largest volume, suffered the most from editing.**

**They've been obscured so badly that they've become a technical marriage.**

But that is not all. There are two circumstances that indicate that not color slides were scanned, but duplicates made on countertype film. In English it sounds like "master copy". This master copy was scanned. This will be discussed in detail in the next article.

\*

Cameraman L. Konovalov was with you. Until next time!